

What is claimed is:



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1. Method for separating particulate matter from a gaseous stream, the method comprising
 - passing the gaseous stream containing the suspended particulates into a separator apparatus which includes at least two multiple-inlet-multi-cyclones (16A – 16C; 31A – 31E), wherein the particulates are separated from the gas by centrifugal force,

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characterized in that

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- a separator apparatus is employed wherein at least two (16A – 16C; 31A – 31E) of the multiple-inlet cyclones are adapted to operate in parallel so as to form a multiple-inlet-multicyclone apparatus;

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2. Method according to claim 1, characterized in that the gaseous stream to be treated is flue gas discharged from a primary separator apparatus.

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3. Method according to claim 2, characterized in that said primary separator apparatus comprises a conventional cyclone or multiple-inlet cyclone or a cascaded cyclone configuration of the same.

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4. Method according to claim 1, characterized in that the gaseous stream to be treated is passed into said multiple-inlet-multicyclone apparatus from a secondary separator apparatus.

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5. Method according to claim 4, characterized in that said primary and secondary separator apparatuses comprise a conventional cyclone or multiple-inlet cyclone, a cascaded cyclone configuration of the same or a combination of a multiple-inlet cyclone with a cascaded cyclone configuration.

6. Method according to any one of foregoing claims, characterized in that the gaseous stream to be treated is product gas which is discharged from a fluidized catalytic process and contains suspended catalyst.

5 7. Method according to any one of claims 1 - 5, characterized in that the gaseous stream to be treated is flue gas which is discharged from the combustion of coke performed in catalyst regeneration and hence contains suspended catalyst.

10 *Method* according to any one of claims 1 - 5, characterized in that said fluidized catalytic process comprises catalytic cracking of hydrocarbon compounds performed in a fluidized catalytic cracking unit.

15 9. Method according to any one of claims 1 - 5, characterized in that the stream of said process discharge gas to be treated is flue gas from a fluidized-bed combustion process of solid fuels performed in heat or power generation.

20 10. Method according to any one of foregoing claims, characterized in that the dust concentration of the gaseous stream being treated is reduced to a value not greater than 50 mg/Nm³.

11. Method according to any one of foregoing claims, characterized in that the separation of particulate matter is carried out using 3 to 25 parallel-connected cyclones (16A - 16C; 31A - 31E).

25 12. Method according to claim 11, characterized in that therein are used 3 to 25 parallel-connected cyclones (16A - 16C; 31A - 31E) in an arrangement, wherein the diplegs (20A - 20C; 38A - 38E) of the parallel-connected cyclones are adapted into the interior of a common discharge conduit (27; 34).

30 13. Assembly for separation of particulate matter from a gaseous stream in process equipment, the assembly comprising

- at least two multiple-inlet cyclones (16A – 16C; 31A – 31E),

characterized by

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- having at least two of the multiple-inlet cyclones connected in a parallel configuration.

14. Assembly according to claim 13, characterized in that said parallel-connected cyclones (16A – 16C) have a common gas inlet channel (15) formed between two concentric cylindrical or partially conical envelope surfaces (12, 14; 14, 10 21), whereby said cyclones (16A – 16C) are adapted to operate in the interior space of said gas inlet channel (15).

15. Assembly according to claim 13 or 14, characterized in that said gas inlet channel (15) has an essentially circular cross section in a plane perpendicular to the center axis of the cyclone separation chamber.
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16. Assembly according to claim 13, characterized in that the center conduits (37A – 37E) of said multiple-inlet cyclones (31A – 31E) are adapted to pass through a common gas inlet channel (40). A 13, 1.3

17. Assembly according to any one of claims 13 - 16, characterized in that each one of said multiple-inlet cyclones (16A – 16C; 31A – 31E) is provided with a separation chamber which is equipped with guide vanes (17A – 17C; 42A – 42E) and whose center axis is aligned essentially upright.

18. Assembly according to any one of claims 13 - 17, characterized in that the guide vanes (17A – 17C; 42A – 42E) of said multiple-inlet cyclones are spaced in an annular fashion about the inner perimeter of the cyclone chamber, reaching partially or entirely into the riser channel so as to form a louver comprising a plurality of parallel inlet channels for the entering gas flow.

19. Assembly according to any one of claims 13 - 18, **characterized** in that the number of said parallel-connected multiple-inlet cyclones (16A - 16C; 31A - 31E) is 3 to 300.

5 20. Assembly according to any one of claims 13 - 19, **characterized** in that said assembly is connected to a fluidized catalytic process apparatus or process equipment used in fluidized-bed combustion.

10 21. Assembly according to any one of claims 13 - 20, **characterized** in that said multiple-inlet cyclones have guide vanes serving to divide the gaseous stream into substreams so as to permit an accelerated gas flow velocity to be arranged individually for any one of said substreams.

15 22. Assembly according to claim 21, **characterized** in that the guide vanes are straight.